

INVASIVE ALIEN FLORA OF INDIA



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Front cover

Left to right

Eichhornia crassipes, *Parthenium hysterophorus*, *Lantana camara*, *Hyptis suaveolens*

Hill (on the way to Saptasajya, Dhenkanal district, Orissa) showing complete infestation by invasive species (*Chromolaena odorata*)

3. Information of Plants



Acacia farnesiana

Family: Mimosaceae

Pop. Name: Fragrant Acacia

Nativity: Trop. South America (introduced in India before 1832)

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – March

Citation: *Acacia farnesiana* (L.) Willd. Sp. Pl. 4: 1083. 1806; FBI 2: 292; 1878. Gamble 1: 425 (301). 1919. *Mimosa farnesiana* L. Sp. Pl. 521. 1753.

Description: A shrub or small tree. Stems grey. Spines straight, often paired, 0.5 - 1.4 cm long. Pinnae 2-7 pairs. Leaflets small, elliptic, 5 x 1 mm, 10-15 pairs, overlapping, petiole with a gland near the middle. Flowers golden-yellow, foetid, in axillary, fascicled heads. Pods 3.5-7 x 1.2 cm, thick, cylindrical, hooked at the tip, pulpy inside.

Remarks: Occasional in thorny scrub and dry degraded forests and often creates close thickets through which cattle cannot move.



Acacia mearnsii

Family: Mimosaceae

Pop. Name: Black Wattle

Nativity: South East Australia

Distribution in India: Western Ghats

Propagation: Seeds

Fl & Fr: August – March

Citation: *Acacia mearnsii* De Wild. Pl. Bequaert. 3:61. 1925.

Description: Tree to 12 m tall; crown conical or rounded; stems without spines or prickles. Leaves bipinnate, on petioles to 2.5 cm long, with a gland above; rachis 4–12 cm long with numerous raised glands all along its upper side; pinnae in 8–30 pairs, pinnules in 16–70 pairs, linear-oblong, 1.5–4 x 0.5–0.75 mm. Flowers in globose heads, pale yellow. Pods moniliform, dehiscent, usually 3–10 x 0.5–0.8 cm, with 3–14 joints; seeds black, smooth.

Remarks: Introduced for afforestation in Western Ghats. Regenerates rapidly after fire and forms dense thickets. It is distributed in forests and grazing lands in high altitude areas.



Acanthospermum hispidum

Family: Asteraceae

Pop. Name: -

Nativity: Brazil

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: July – January

Citation: *Acanthospermum hispidum* DC. Prodr. 5:522. 1836; Gamble 2: 704(476). 1921.

Description: Erect, diffusely branched, hispid, annual herbs. Leaves opposite, obovate, spatulate, scabrous, 2.5-6 x 1-3 cm, base cuneate, margin serrate, apex acute. Heads sessile, solitary in the forks of dichotomous branches, greenish yellow. Achenes 5-10, triangular, spinescent with 2 large, horn like, erect, apical spines. Pappus absent.

Remarks: Troublesome weed in cultivated fields and scrub lands.



Aerva javanica

Family: Amaranthaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – February

Citation: *Aerva javanica* (Burm.f.) Juss.ex Schult. Syst. Veg. Ed. 15.5: 565. 1819; FBI 4: 727. 1885. *Iresine javanica* Burm.f. Fl. Indica 212.t. 65.f.2. 1768. *Aerva tomentosa* Forssk. Fl. Aeg.-Arab. 122. 170. 1775; Gamble 2: 1178 (824). 1925.

Description: Annual, erect herbs to 75 cm tall. Leaves alternate, linear-oblong, 3-5.5 x 0.7-0.9 cm, sessile, base attenuate, margin undulate, apex acute to obtuse, white-tomentose. Inflorescence terminal, in white-woolly spikes, to 12 cm. Flowers unisexual, stigmas 2, as long as style. Utricle circumscissile. Seeds annular, testa shiny, black.

Remarks: Occasional weed of open forests, waste lands and cultivated fields.



Aeschynomene americana

Family: Papilionaceae

Pop. Name: American Joint-vetch

Nativity: Trop. America

Distribution in India: Andhra Pradesh, Bihar, West Bengal, Orissa, Kerala, Tamil Nadu

Propagation: Seeds

Fl & Fr: August – January

Citation: *Aeschynomene americana* L. Sp. Pl. 713. 1753; Chandrabose & Sriniv. Bull. Bot. Surv. India 18: 236. 1976; Saxena & Brahmam, Fl. Orissa 1: 446-447. 1994.

Description: Annual, decumbent or erect herbs to 75 cm tall; branches hirsute. Leaves 1.5-5 cm long, rachis hirsute, petiole about 3.5 mm long; leaflets 10-25 pairs, margin ciliate-toothed, subfalcate, about 7 x 1.2 mm, glabrous, with strong main nerves. Racemes up to 3 cm long, 4-8-flowered, peduncles and pedicels hairy. Flowers yellow, standard petal orbicular. Pod short, stalked, slightly curved, 2-2.5 – 0.3 cm; joints usually 6-8.

Remarks: Occasional weed of edges of tanks, pools, ditches and marshy lands..



Ageratina adenophora

Family: Asteraceae

Pop. Name: Eupatory, Crofton weed

Nativity: Trop. America

Distribution in India: Kerala, Tamil Nadu

Propagation: Seeds

Fl & Fr: August – February

Citation: *Ageratina adenophora* (Spreng.) King & Robinson, Phytologia 19: 211. 1970. *Eupatorium adenophorum* Spreng., Syst. 3: 420. 1826; *E. glandulosum* Kunth, Nov. Gen. Sp. 4: 122. 1820, non Mixhaux, 11803; Matthew, Rec. Bot. Surv. India 20: 135. 1969.

Description: Perennial, glandular hairy, erect herbs to 1 m tall. Leaves opposite, deltoid-ovate, margin serrate, purple below, leaf blade 3-8 cm, Inflorescence clustered, in corymbose cymes; phyllaries glandular-puberulent, heads homogamous. Flowers 10-60 per head, cylindric, corolla white, pink tinged. Achene 5 angled, 5 ribbed, pappus white, feathery.

Remarks: Occasional weed in forest clearings and along road sides at higher elevations in Western Ghats.



Ageratum conyzoides

Family: Asteraceae

Pop. Name: Goat weed

Nativity: Trop. America (introduced in India during the 16th century)

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: July – January

Citation: *Ageratum conyzoides* L. Sp. Pl. 938. 1753; FBI 3: 243. 1881; Gamble 2: 672 (476).1921.

Description: Annual, erect, foetid herbs up to 1 m tall. Leaves ovate to triangular, 3-8 x 1-3.5 cm, base rounded or truncate, margin serrate, apex acute or acuminate. Heads in terminal corymbs. Florets blue or white. Achenes black, 5-angled. Pappus scales 5, serrate, awn-tipped.

Remarks: Aggressive colonizer. Troublesome weed in gardens, cultivated fields and forests.



Ageratum houstonianum

Family: Asteraceae

Pop. Name: Blue Mink, Floss Flower

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: July – February

Citation: *Ageratum houstonianum* Mill. Gard. Dict. 8: 2. 1768. *A. conyzoides* L. *houstonianum* (Mill.) Sahu in Feddes Repert. 93: 61-65. 1982.

Description: Annual, erect and often much branched herb; stems leafy, pilose or villous with spreading hairs. Leaves opposite, on rather long, slender petioles, very thin, broadly deltoid-ovate, 4-8 cm long, obtuse or acute, base cordate, coarsely crenate, thinly villous-hirsute. Heads numerous lavender or pale blue, many flowered; Achenes black, 1.2 mm long

Remarks: Introduced as an ornamental. Occasionally, grown in high altitude areas of Himalaya and Western Ghats in fringes of forests.



Alternanthera paronychioides

Family: Amaranthaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – November

Citation: *Alternanthera paronychioides* A. St. Hil. Voy. Distr. Diamous Bresil 2: 43. 1833; C. Towns in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 1: 50. 1980.

Description: Prostrate, creeping herbs; stem with long crisped hairs on the younger parts. Leaves oblanceolate-elliptic, 1-1.3 x 0.5-0.7 cm, sessile, hairy. Flowers in numerous heads. Utricle orbicular, seed discoid, 1 mm across, faintly reticulate.

Remarks: Occasional weed along edges of tanks, ditches and in marshy lands.



Alternanthera philoxeroides

Family: Amaranthaceae

Pop. Name: Alligator weed

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Vegetative

Fl & Fr: August – November

Citation: *Alternanthera philoxeroides* (Mart.) Griseb. in Abt. Ges. Wiss. Goett. 24: 36. 1879; Raju in Indian Bot. Repr. 5: 207-208. 1986. *Bucholzia philoxeroides* Mart. Beitr. Amar. 107. 1825.

Description: Aquatic or marshy prostrate herbs, with many erect branches, lower nodes rooting, stem fistular. Leaves opposite, elliptic-lanceolate to obovate-lanceolate, upto 7 x 1 cm, base narrowed down to an indistinct petiole, glabrous. Inflorescence axillary, in globose peduncled heads; rarely flowers but with no seed set.

Remarks: Aggressive colonizer. Troublesome weed in stagnant water bodies, drainage channels and marshy lands.



Alternanthera pungens

Family: Amaranthaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds, Vegetative

Fl & Fr: August – December.

Citation: *Alternanthera pungens* Kunth in H.B. & K. Nov. Gen. Sp. 2: 206. 1817. *Achyranthes repens* L. Sp. Fl. 205. 1753.

Description: Spiny, prostrate herb to 50 cm; branches vilous-hairy. Leaves of the same pair unequal, obliquely elliptic to suborbicular, opposite-decussate, 1.5-3 x 1-2 cm, attenuate to cuneate, apex obtusely apiculate; spikes 2 or more, 0.5-1.5 x 0.5-1 cm, in axillary clusters, seeds discoid, 1 mm across.

Remarks: Troublesome weed in gardens, cultivated fields and forest openings.



Alternanthera tenella

Family: Amaranthaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: July – January

Citation: *Alternanthera tenella* Colla, Mem. Acad. Sli. Terime 33:131. T. 9.1820. Mears, Proc. Acad. Nat. Sci. Philadelphia 129:19.1977. Reddy & Raju in J. Econ. Tax. Bot. 21(3). 577-586.

Description: Ascending or prostrate perennial herb, rooting from the basal nodes. Leaves lanceolate, spatulate or Elliptic-oblongate or ovate-suborbicular, 1-5 x 0.4-1.2 cm. Spikes sessile, usually solitary, globose or ovoid. Tepals 5, lanceolate-acute, outer 3, 3-nerved below, inner 2 tepals 1-2-nerved, pungent, hairy utricle falls off with the tepals.

Remarks: Aggressive colonizer. Abundant along railway tracks, road sides and degraded forest lands.



Antigonon leptopus

Family: Polygonaceae

Pop. Name: Railway Creeper, Mexican Creeper

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: March – December

Citation: *Antigonon leptopus* Hook. & Arn. Beechey Voy. 300.t.69.1841; Gamble 2: 1192 (835).1925.

Description: Climbing, pretty shrubs with tendrils. Leaves spiral, simple, elliptic ovate, 6-12 x 3-8 cm, base hastate, entire, acute. Stipules conspicuous, 2 mm long. Inflorescence axillary and terminal in panicles, tip tendrillar. Flowers hermaphrodite, pink.

Remarks: Occasionally, runs wild near gardens, railway tracks, road sides and disturbed places.



Argemone mexicana

Family: Papaveraceae

Pop. Name: Prickly Poppy

Nativity: Trop. Central & South America
(introduced to India in 17th century)

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: September – January

Citation: *Argemone mexicana* L. Sp. Pl. 508. 1753; FBI 1:117. 1872; Dunn in Gamble 1:32 (25).1915.

Description: Annual prickly herbs. Latex yellow. Leaves glaucous, prickly, sinuate, pinnatifid. Flower bright yellow, solitary, terminal; stigmas red. Capsules erect, prickly, oblong, porocidal; seeds numerous, black, used to adulterate mustard seed.

Remarks: Aggressive colonizer. Common winter season weed in cultivated fields, scrub lands and fringes of forests.



Asclepias curassavica

Family: Asclepiadaceae

Pop. Name: Blood flower, False Ipecac

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: Throughout the year

Citation: *Asclepias curassavica* L. Sp. Pl. 215; FBI 4:18. 1883; Gamble 2: 833 (585) 1923.

Description: Erect herbs to 1 m tall. Roots tuberous. Latex milky. Leaves decussate or whorled, lanceolate, 5-12 x 1-3 cm, chartaceous, margin entire, acute at both ends. Flowers bright red in subterminal umbels. Follicles 7 x 1 cm, tapering at both ends; seeds flattened, winged, 6 x 3 mm, coma silky.

Remarks: Aggressive colonizer. Introduced as ornamental plant. Runs wild in wet lands.



Asphodelus tenuifolius

Family: Liliaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Asphodelus tenuifolius* Cav. Annal.Cienc. Nat. 3:46. t. 27. 8.2. 1801; FBI 6: 332. 1892.

Description: Erect annual herbs, with a short root stock. Leaves in a basal rosette, erect, fistular, ribbed with prominent nerves, usually shorter than scapes. Flowers in lax racemes of 8-20 cm long, whitish. Capsule globose, faintly 3-gonous, 6-seeded; seeds black, acutely 3-gonous, rugose.

Remarks: Occasional weed of cultivated fields (tobacco, jowar, maize and vegetable crops).



Bidens pilosa

Family: Asteraceae

Pop. Name: Spanish Needle

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: July – December

Citation: *Bidens pilosa* L. Sp. Pl. 832. 1753, FBI 3: 309. 1881. Gamble 2: 709 (499). 1921.

Description: Annual erect herbs. Leaves opposite, biternate, or trifoliate, rarely simple 3-7 x 1-3 cm, lateral segments ovate to lanceolate, attenuate or obtuse, crenate or serrate, acuminate. Heads in terminal corymbose panicles, yellow. Achenes lanceolate to linear, ribbed black.

Remarks: Occasional weed of cultivated fields, scrub and forests.



Blainvillea acmella

Family: Asteraceae

Pop. Name: -

Nativity: Trop. America (introduced in India during 18th century)

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Blainvillea acmella* (L.) Philipson in Blumea 6: 350. 1930. *Verbesina acmella* L. Sp. Pl. 801. 1753. *Blainvillea rhomboidea* Cass. Dict. Sci. Nat. 29: 494. 1823; Gamble 2: 706(496). 1921.

Description: Annual erect herbs. Stems clothed with white, crisped hairs. Leaves, ovate lanceolate, 3-6 x 1-3 cm, base cuneate, margin serrate, apex acuminate. Heads solitary or 3, terminal in the forks of dichotomies or in upper axils, white, heterogamous. Achenes obovate, transversely rugose. Pappus of two unequal short bristles.

Remarks: Aggressive colonizer. Common weed in cultivated fields, degraded forests, scrub lands and along road sides.



Blumea eriantha

Family: Asteraceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: **Blumea eriantha** DC. in Wight Contrib. Bot. Ind. 15. 1834; FBI 3: 66. 1881. Gamble 2: 686(482). 1921.

Description: Annual erect, foetid herbs, to 1 m tall. Stem brown, striated. Leaves sessile, obovate, 1-10 x 0.5-2 cm, densely silky, base attenuate, margin spinulose-dentate, apex obtuse, acute or obtusely apiculate. Heads terminal or axillary, heterogamous. Achenes oblong to elliptic-oblong. Pappus setaceous.

Remarks: Aggressive colonizer. Abundant along railway tracks, road sides and degraded forest lands.



Blumea lacera

Family: Asteraceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – February

Citation: **Blumea lacera** (Burm.f.) DC. in Wight Contrib. Bot. Ind. 14. 1834; FBI 3: 262. 1881; Gamble 2: 687(483). 1921. *Conyza lacera* Burm.f. Fl. Ind. 180.t.55.1768.

Description: Annual erect, strongly foetid herb (smell of turpentine) to 75 cm tall. Leaves thin, variable, obovate or ovate, base attenuate and clasped to stem, margin dentate with sharp teeth, apex acute or apiculate. Heads heterogamous, in short axillary cymes or terminal, spiciform panicles. Achenes oblong, pappus setaceous.

Remarks: Aggressive colonizer. Abundant along railway tracks, road sides, in waste lands and degraded forests.



Blumea obliqua

Family: Asteraceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – January

Citation: **Blumea obliqua** (L.) Druce in Rep. Bot. Soc. Exch. Club. Brit. Isles 4: 609. 1917. *Erigeron obliquum* L. Mant. Pl. 573. 1771. *B. amplexans* DC. in Wight Contrib. Bot. Ind. 13: 1834; FBI 3: 260. 1881; Gamble 2: 681(482). 1921.

Description: Annual erect or decumbent, woody, deep-rooted, villous, annual herb to 75 cm tall. Leaves sessile, base sub-amplexicaul, spiral, oblong or obovate; lower dentate, the upper often entire, alternate. Heads terminal, disciform, solitary or two, heterogamous. Ray florets pink. Disc florets yellowish. Achenes oblong, hairy, pappus creamy.

Remarks: Aggressive colonizer. Common weed of cultivated fields, grasslands, forests, scrub and waste lands.



Borassus flabellifer

Family: Arecaceae

Pop. Name: Palmyra, Toddy Palm

Nativity: Trop. Africa

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: March - May

Citation: **Borassus flabellifer** L. Sp. Pl. 1187.1753; FBI 6: 482.1893; Fischer in Gamble 3: 1562(1090).1931.

Description: Very large palm; stem obscurely hooped. Leaves simple, palmate (fan-shaped), plicately multifid, leaflets 60-80, apex acuminate. Petiole stout, spinous, base broad, split. Spadices interfoliar, large, dioecious, branched; peduncle sheathed with open spathes. Male flowers small, clustered. Female flowers large, globose. Drupes yellow when ripe, subglobose, enclosed by the enlarged perianth, with 1-3 compressed pyrenes.

Remarks: Aggressive colonizer. Cultivated and self sown, occasionally found to be gregarious near by cultivated fields, scrub lands and waste lands.



Calotropis gigantea

Family: Asclepiadaceae

Pop. Name: Madar, Swallo Wort

Nativity: Trop. Africa

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: Throughout the year

Citation: *Calotropis gigantea* (L.) R.Br. in Ait. Hort. Kew. ed. 2.78.1811; FBI 4: 17.1883; Gamble 2: 832(585). 1923. *Asclepias gigantea* L. Sp. Pl. 214.1753.

Description: Large bushy shrubs to 2 m tall, covered with white soft wool. Leaves elliptic to oblong, 8-14 x 3-8 cm, coriaceous, base auriculate, apex acute, subsessile. Inflorescence an umbellate panicle, axillary or terminal. Corolla white or purple, lobes spreading. Follicles oblong, inflated, 8 x 4 cm; seeds ovate to oblong, 5 x 6 mm; coma long, silky.

Remarks: Aggressive colonizer. Common in cultivated fields, scrub lands and waste lands.



Calotropis procera

Family: Asclepiadaceae

Pop. Name: Madar, Swallow Wort

Nativity: Trop. Africa

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: March - December

Citation: *Calotropis procera* (Ait.) R.Br. in Ait. Hort. Kew. ed. 2. 2: 78.1811; FBI 4:18.1883; Gamble 2: 832(585). 1923. *Asclepias procera* Ait. Hort. Kew. ed. 1.1:305.1785.

Description: Large bushy shrubs to 2 m tall. Leaves decussate, obovate, 6-13 x 3-9 cm, coriaceous, base auriculate, apex acute, subsessile. Inflorescence an axillary or terminal umbellate panicle. Corolla white or purple, lobes erect. Follicles subglobose or ovoid, to 7.5 cm long. Seeds light brown, minutely tomentose.

Remarks: Aggressive colonizer. Occasional in cultivated fields, waste lands, scrub lands.



Cardamine hirsuta

Family: Brassicaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Himalaya, Western Ghats

Propagation: Seeds

Fl & Fr: July – February

Citation: *Cardamine hirsuta* L., Sp. Pl. 655. 1753.

Description: Annual herb to 25 cm tall. Stems glabrous. Lowest leaves in a distinct rosette, pinnate, with 1-3(-5) pairs of obovate to orbicular lateral leaflets and a larger, reniform terminal leaflet; leaflets angular, hairy. Petals 2.5-3 mm or absent. Siliqua 18-25 x ca. 1 mm, erect. Seeds 0.9-1 x 0.7-0.8 mm

Remarks: Occasional weed on disturbed ground in high altitude areas.



Cardamine trichocarpa

Family: Brassicaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: July – December

Citation: *Cardamine trichocarpa* Hochst. ex A.Rich., Tent. Fl. Abyss. 1: 18. 1847; Dunn in Gamble 1: 38. 1915.

Description: Annual herbs to 20 cm tall. Leafy shoots many, arising from base. Leaves odd-pinnate, lobes 3-pairs, opposite or spiral, end ones larger, ovate or elliptic-ovate, chartaceous, base obtuse-cuneate, margin sinuate, apex subacute, 1-1.2 cm. Inflorescence terminal corymb. Flowers white, 2 mm across. Petals absent. Siliqua linear, 2 cm, erect, compressed, pubescent, midrib obscure; seeds 9-12, in one row.

Remarks: Occasionally found in gardens, edges of tanks and along forest fringes in moist places.



Cassia absus

Family: Caesalpiniaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: September – December

Citation: *Cassia absus* L. Sp.Pl. 376. 1753; FBI 2: 265. 1878; Gamble 1: 403 (285). 1919.

Description: Erect herbs with viscid, glandular hairs. Rachis with a gland between the lowest pairs of leaflets. Leaflets elliptic-obovate, oblique, sub-acute, mucronate, glabrous above, pubescent beneath, 4 x 2.5 cm. Raceme short, terminal or axillary. Petals reddish-yellow. Pod oblique, covered with stiff glandular hairs, 5-7 seeded. Seeds black, ovoid.

Remarks: Aggressive colonizer. Common in degraded forests, scrub lands and cultivated fields.



Cassia alata

Family: Caesalpiniaceae

Pop. Name: Ringworm Cassia, Roman Candle

Nativity: West Indies

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: May – December

Citation: *Cassia alata* L. Sp. Pl. 378. 1753; FBI 2: 264. 1878; Gamble 1: 404(286). 1919.

Description: Shrubs up to 2 m tall. Leaves 30-50 cm long, leaflets 8-14 pairs, oblong, 5-12 x 2-8 cm, inequilateral, thin-coriaceous, glabrous, broadly rounded, oblique at base, margin entire, apex obtuse, apiculate, rachis winged on each side of the face. Flowers yellow in terminal dense racemes, peduncle up to 12 cm long, bract spathaceous enclosing bud. Pod oblong, thin, straight, 15 x 1.5 cm, margin with 2 longitudinal wings.

Remarks: Introduced as an ornamental. Occasionally found in moist places and near by forests.



Cassia hirsuta

Family: Caesalpiniaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: September - February

Citation: *Cassia hirsuta* L. Sp. Pl. 378. 1753; FBI 2: 263. 1878; Gamble 1: 401(284). 1919.

Description: Undershrubs up to 1 m tall. Branches softly tomentose, grooved. Leaves 15-20 cm long, with a gland at base of petiole. Leaflets 4-6 pairs, ovate-elliptic, up to 10 x 5 cm, cuneate at base, margin entire, apex acuminate. Flowers yellow in leaf axils or in corymbose panicles. Pod hirsute, slender, flattened, dehiscent, many seeded.

Remarks: Aggressive colonizer. Occasional, along road sides and in disturbed places of forests.



Cassia obtusifolia

Family: Caesalpiniaceae

Pop. Name: Sickie Senna

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Cassia obtusifolia* L. Sp. Pl. 377. 1753; Raju & Rao in J. Econ. Tax. Bot. 8: 485. 1986. *C. tora* sensu Baker in FBI 2: 263. 1878, p.p. *C. tora* L. var. *obtusifolia* Haines 2: 304. 1922.

Description: An annual herb to 1m tall. Leaflets 3-5 pairs, 1.5-4 x 1-2.8 cm, obovate-oblong; conical gland between lowest pair of leaflets. Flowers bright yellow in axillary racemes. Three anthers distinctly necked at apex. Pod cylindric, faintly reticulate, beaked, 30-35 seeded.

Remarks: Aggressive colonizer. Abundant along railway tracks, road sides and in degraded forests.



Cassia occidentalis

Family: Caesalpiniaceae

Pop. Name: -

Nativity: Trop. South America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: July – December

Citation: *Cassia occidentalis* L. Sp. Pl. 377. 1753; FBI 2:262. 1878; Gamble 1: 401(284). 1919.

Description: Undershrubs. Branchlets glabrous. Leaves 15-20 cm long. Petiole glandular; leaflets 4-6 pairs, elliptic-ovate, acuminate, rounded or cuneate at base. 6 x 2 cm. Raceme 2-6 flowered. Stamens 6-7. Pod linear, turgid but compressed, brown with yellow margins, 11 x 0.5 cm.

Remarks: Aggressive colonizer. Occasional weed of cultivated fields and near by villages.



Cassia pumila

Family: Caesalpiniaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: July – March

Citation: *Cassia pumila* Lam. Encycl. 1: 651. 1785; Gamble 1: 403(285). 1919.

Description: Prostrate herbs. Branches pubescent. Leaves 3 cm long. Petiole with a peltate gland, leaflets 20-30 pairs, oblong-lanceolate, apiculate, pubescent. Flowers solitary, axillary. Stamens 5. Staminodes 0. Pod flat, pubescent, 10-14 seeded.

Remarks: Common weed in open forests and grassy localities, under shade



Cassia rotundifolia

Family: Caesalpinaceae

Pop. Name: -

Nativity: Trop. South America

Distribution in India: Andhra Pradesh, Pondicherry

Propagation: Seeds

Fl & Fr: August – December

Citation: *Cassia rotundifolia* Pers. Syn. Pl. 1: 456. 1805. Reddy & Reddy in J. Econ. Tax. Bot. 28: 73-74. 2004. *Chamaecrista rotundifolia* (Pers.) Greene, Pittonia 4: 31. 1899. *Cassia bifoliolata* DC. ex Colladon Hist. Nat. Med. Casses 120, t. 9(b). 1816.

Description: A herbaceous annual or subwoody perennial. Stems prostrate to semi-prostrate. Leaves bifoliate, small. Petiole short, 3-8 mm long. Leaflets asymmetrically subrotund to broadly obovate, rounded apically, 0.5 to 3 cm long. Flowers one or two, axillary, small, yellow; petals about 6 mm long, obovate. Pod linear, flat, 1.5 to 4 cm long and 3 to 5 mm wide, elastically dehiscent, blackish brown when ripe.

Remarks: Recent introduction to India. Occasional in sandy places near streams.



Cassia tora

Family: Caesalpinaceae

Pop. Name: Sickie Senna

Nativity: Trop. South America (introduced in India before 1824)

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Cassia tora* L. Sp. Pl. 376.1753; Gamble 1: 401(284). 1919.

Description: Annual herbs. Leaves 6-9 cm long, with subulate glands between the leaflets, leaflets 3-5 pairs, obovate-oblong, obtuse, apiculate at apex, 5 x 2.5 cm; a gland between leaflets of each of two lower pairs. Flowers in axillary pairs. Stamens 6-7. All seven anthers rounded at apex. Pod apiculate, subtetragonal, 12 x 0.5 cm.

Remarks: Aggressive colonizer. Abundant along railway tracks, road sides and degraded forest lands.



Cassia uniflora

Family: Caesalpiniaceae

Pop. Name: -

Nativity: Trop. South America & West Indies

Distribution in India: Andhra Pradesh, Maharashtra, Karnataka, Tamil Nadu

Propagation: Seeds

Fl & Fr: November – April

Citation: *Cassia uniflora* Miller, Gard. Dict.ed.8.n.1768. Raghavan in Bull.Bot.Surv.India 22:225 (1980) 1982, Reddy et al in Ind. J. Forestry 23(3): 324-325. 2000. *Cassia sericea* Swartz, Prodr. 66. 1788 & Fl. Ind. Occ. 2(1): 724. 1788; Saldanha, Fl. Karnataka 1: 386. 1984.

Description: Annual, erect herb up to 50 cm high; younger parts rufous hairy. Leaf rachis with clavate glands between the leaflets; leaflets 2-4 pairs, obovate, obtuse, apiculate, hairy on both surfaces, 2.5-3.5 x 1.2-2 cm, the lowest pair smallest, lateral nerves 4-5-pairs. Flowers 3-5 in axillary racemes; petals yellow, clawed, subequal, 4.25-5 x 2-3.5 mm. Pods linear, densely hairy when young, greenish-yellow, subcompressed, 3-3.5 cm long. Seeds subquadrangular, rhomboidal, 3 mm long, smooth, dull-brown.

Remarks: One of the fast spreading worst weed. Aggressive colonizer. Abundant along railway tracks, road sides, waste lands and in degraded forests.



Catharanthus pusillus

Family: Apocynaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: July – December.

Citation: *Catharanthus pusillus* (Murray) Don, Gen. Hist. 4:95. 1837. *Lochnera pusilla* (Murray) Schum. in Engl. Nat. Pflanzen Fam.IV.2: 145. 1895; Gamble 2: 809 (568). 1923.

Description: Annual herbs to 50 cm. Leaves elliptic-lanceolate, 2-6 x 1-1.5 cm, base acute to attenuate, apex acute-acuminate, lateral nerves 5-7 pairs. Corymbs 5-7 flowered. Corolla white. Follicles slender, subtorulose, glabrous.

Remarks: Common weed in cultivated fields and edges of wet lands.



Celosia argentea

Family: Amaranthaceae

Pop. Name: Wool flower

Nativity: Trop. Africa

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: September – December

Citation: *Celosia argentea* L. Sp. Pl. 205.1753; FBI 4:714.1885; Gamble 2:1166(816)1925. var. *argentea*

Description: Erect herb to 1 m Leaves elliptic ovate below and linear lanceolate above, 5-7.5 x 2-3 cm, base cuneate to attenuate, margin entire, apex acute, glabrous. Inflorescence axillary and terminal, spikes dense, stout, imbricate, 3.5-15 cm long; flowers white. Utricle circumscissile, included by perianth.

Remarks: Aggressive colonizer. Common weed of cultivated fields and scrub lands.



Chamaesyce hirta

Family: Euphorbiaceae

Pop. Name: Snake weed

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Chamaesyce hirta* (L.) Millsp. in Field Columb. Mus. Bot. ser. Publ. 2: 303. 1909. *Euphorbia hirta* L. Sp. Pl. 454. 1753; Gamble 2: 1275 (892). 1925. *E. pilulifera* non L.: FBI 5: 250. 1887.

Description: Erect or decumbent herbs to 50 cm tall. Leaves 0.5-3 x 0.6-1.6 cm, elliptic-lanceolate, obliquely acute-rounded at base, margin serrulate-serrate, apex subacute-acute, chartaceous. Flowers greenish, in axillary, cymose cyathia. Capsule 1.8 mm, pubescent. Seeds 1mm, angled, shallowly furrowed.

Remarks: Aggressive colonizer. Abundant along railway tracks, road sides, in cultivated fields and forests.



Chamaesyce indica

Family: Euphorbiaceae

Pop. Name:

Nativity: Trop. South America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: July – December

Citation: ***Chamaesyce indica*** (Lam.) Croizat in Lilloa 6: 299. 1941. *Euphorbia indica* Lam. Encycl. 2:423. 1786; Raju & Rao in Indian J. Bot. 2: 205. 1979. *E. hypericifolia* auct. non L. 1753; FBI 5: 249. 1887; Gamble 2: 1275(892). 1925.

Description: Ascending or erect herb to 30 cm tall. Leaves 1-3 x 0.5-1.5 cm, elliptic-broadly oblong, obliquely truncate at base, serrulate, acute-obtuse, opposite, sparsely pubescent below. Cyathia 13-15, aggregated in axillary and terminal clusters. Capsule 1.5 mm, subglobose, hairy, seeds 1 mm, 4-angled.

Remarks: Aggressive colonizer. Common weed of moist cultivated fields, gardens and wet lands.



Chloris barbata

Family: Poaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: September - January

Citation: ***Chloris barbata*** Sw. Fl. Ind. Occid. 1: 200. 1797; FBI 7: 292. 1896; Fischer in Gamble 3: 1838(1297). 1934. Bor 465. 1960.

Description: An annual, tufted grass. Culms up to 50 cm tall, creeping at base. Leaf sheath 4-9 cm long, glabrous. Leaves linear-lanceolate, base rounded, apex acuminate, glabrous. Spikes digitate, terminal; spikelets 3 mm, 3-flowered. Glumes linear, densely ciliate on the margin. Caryopsis oblong, compressed.

Remarks: Aggressive colonizer. Common weed of disturbed places of forests, scrub, cultivated fields and near by habitation.



Chromolaena odorata

Family: Asteraceae

Pop. Name: Siam weed

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: December - May

Citation: *Chromolaena odorata* (L.) King & Robinson in Phytologia 20: 204. 1970. *Eupatorium odoratum* L. Syst. Nat. ed. 10(2). 1205. 1759; FBI 3: 244. 1881.

Description: Erect herbs to 2 m tall. Leaves ovate, 3-9 x 1.5-5 cm, base cuneate, margin serrate-dentate, apex acute to subacuminate. Heads in terminal corymbs, pink, homogamous. Outer involucral bracts pubescent. Achenes cuneate, oblanceolate, 5-ribbed. Pappus of long hairs.

Remarks: Aggressive colonizer. Common weed of open moist forests and along railway tracks and road sides.



Chrozophora rottleri

Family: Euphorbiaceae

Pop. Name: -

Nativity: Trop. Africa

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: September – February.

Citation: *Chrozophora rottleri* (Geis.) Spreng. Syst. 3: 850. 1826; Gamble 2: 1317 (921). 1925. *Croton rottleri* Geis. Crot. Monogr. 54. 1807. *Chrozophora plicata* Hook.f. in FBI 5: 409. 1887.

Description: Erect, fulvous - tomentose herbs to 60 cm tall, monoecious. Leaves broadly ovate, 3-6 x 1.2-3 cm, base truncate, 2-glandular at base, margin wavy, sinuate, apex obtuse; flowers yellowish-green in terminal, few flowered racemes. Capsules 9 mm across, depressed, 3-lobed, stellate - tomentose. Seeds globose, smooth, shiny.

Remarks: Aggressive colonizer. Common weed in black cotton soils, wet lands and edges of tanks.



Cleome gynandra

Family: Cleomaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: September – December

Citation: *Cleome gynandra* L. Sp. Pl. 671.1753. *Gynandropsis pentaphylla* (L.) DC. Prodr. 1: 238.1824; FBI 1:171.1872; Dunn in Gamble 1: 40(29).1915. *Gynandropsis gynandra* (L.) Briq. Ann. Conserv. Jard. Bot. Genev. 17: 382.1914. *Cleome pentaphylla* L. Sp. Pl., ed.2. 938.1761.

Description: Erect herb; stems glandular pubescent to viscid. Leaves 3-5-foliolate; leaflets obovate, middle one 2.5-5.5 x 1.5-2.5 cm, laterals 1-3 x 0.5-1.5 cm, chartaceous, cuneate, entire, apex acute; petiole 3-18 cm. Racemes terminal. Flower white; stamens 6, gynophore to 1 cm. Capsule terete, 7-10 cm x 4 mm across, striate, glandular, beak 5 mm; seeds many, 1.5 mm across, cleft closed, concentrically ridged and transversely crested.

Remarks: Aggressive colonizer. Weed of village wastelands, dumping grounds, crop lands.



Cleome monophylla

Family: Cleomaceae

Pop. Name: -

Nativity: Trop. Africa

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Cleome monophylla* L. Sp. Pl. 672.1753; FBI 1:168.1872; Dunn in Gamble 1: 41(29). 1915.

Description: Erect herb; branchlets glandular pubescent. Leaves simple, oblong or lanceolate, 3-6.5 x 1-2 cm, truncate, ciliate, apex acute; petiole to 5 cm. Racemes to 20 cm. Flowers pink; stamens 6. Capsule to 8 cm, strongly ribbed, ribs glandular, beak flat, 1 cm; seeds ca. 40, ca 1.5 mm across, clefts closed, ridged.

Remarks: Common weed of cultivated fields, waste lands and scrub.



Cleome rutidosperma

Family: Cleomaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – November

Citation: *Cleome rutidosperma* DC. Prod. 1:241. 1824; Saxena & Brahmam, Fl. Orissa 1: 64. 1995; Reddy *et al.* in *J. Econ. Tax. Bot.* 24: 291,292. 2000.

Description: Erect herb; stem ribbed with sparse soft, prickly like appendages. Leaves trifoliate, lower ones long petioled, higher ones short petioled or sessile; leaflets elliptic-rhomboid or elliptic-lanceolate, 0.5-3 x 0.3-1.5 cm, base cuneate, serrulate. Flowers solitary, violet-blue, in leaf axils. Capsule slightly compressed, attenuate at both ends, to 6 cm long. Seeds dark brown, reniform, 1-1.5 mm across, cleft open.

Remarks: Occasional along railway tracks, road sides and in crop lands.



Cleome viscosa

Family: Cleomaceae

Pop. Name: Dog Mustard

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Cleome viscosa* L. Sp. Pl. 672.1753; FBI 1: 70. 1872; Dunn in Gamble 1: 41(29). 1915.

Description: Erect herb to 1m; branchlets viscid. Leaves 3-5 foliolate; leaflets obovate or elliptic, middle one 2-4.5 X 1 - 2 cm, laterals 1.3-3.5 x 0.8 - 1.5 cm, inequilateral, base cuneate, ciliate, apex acute; petiole to 4.5 cm. Racemes to 25 cm; flowers yellow; stamens 12-20. Capsule terete to 7 cm, ribs oblique, glandular hairy, beak 5 mm, dehiscing from above; seeds to 1.5 across, clefts closed, glabrous, transverse ridges prominent, concentric ones faint.

Remarks: Aggressive colonizer. Common weed of cultivated fields, waste lands, scrub lands and degraded forests.



Clidemia hirta

Family: Melastomataceae

Pop. Name: Koster's curse

Nativity: Trop. America

Distribution in India: Himalaya, Western Ghats

Propagation: Seeds

Fl & Fr: June– December

Citation: *Clidemia hirta* (L.) D. Don Mem. Wern. Nat. Hist. Soc. 4:309. 1823. *Melastoma hirtum* L. Sp. Pl. 1: 390. 1753.

Description: Perennial shrub up to 1.5 m tall; stems are covered with red bristles. Leaves are opposite, petiolate, ovate-to-oblong, hairy with crenate margin. Five major veins originate at the base of the leaf and extend to the apex. Inflorescence is a panicle; corolla white, consists of five small petals. Fruit hairy, ovoid, many seeded, bluish-black berry.

Remarks: Occasionally found in open and degraded forests of higher altitudes in Western Ghats and Himalayas..



Conyza bipinnatifida

Family: Asteraceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: June– December

Citation: *Conyza semipinnatifida* Wall. in Cat. 3058. 1829. Naskar & Guha Bakshi in *J. Econ. Tax. Bot.* 4(3): 732. 1983.

Description: Erect, stout annual herb. Leaves alternate, obovate-spathulate, toothed or cut at margin. Heads corymbose, or paniced, rarely solitary, heterogamous, disciform, outer female florets pale coloured, filiform, 2-3-toothed, inner florets bisexual, tubular, yellow. Achenes minute; pappus uniseriate.

Remarks: Occasionally grown on the sandy places, disturbed lands and on the river banks.



Corchorus aestuans

Family: Tiliaceae

Pop. Name: -

Nativity: Trop. America, Africa (introduced before 1845)

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December.

Citation: *Corchorus aestuans* L. Syst. Nat. ed.10. 1079. 1759. *C. acutangulus* auct. non Forsskal 1755: FBI 1: 398. 1874; Dunn in Gamble 1: 121(86). 1915.

Description: Herb to 30 cm tall. Leaves ovate, elliptic or oblong, 2-5 x 1-3 cm, chartaceous, basally 3-4 nerved, pubescent, base and apex obtuse or subacute, serrate, basal most serrations filiform. Flowers yellow. Capsule terete, 2 x 0.5 cm, 6-angular, 3-winged; beak 3-fid, radiating; seeds truncate, 1.5 mm.

Remarks: Aggressive colonizer. Common along railway tracks, road sides, cultivated fields and degraded forests.



Corchorus fascicularis

Family: Tiliaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Peninsular India

Propagation: Seeds

Fl & Fr: July – December

Citation: *Corchorus fascicularis* Lam. Encyl. 2: 104. 1786; FBI 1: 398. 1874; Dunn in Gamble 1: 121 (87). 1915; Daniel & Chandrabose, Fl. India 3: 486. 1993.

Description: Annual herb to 60 cm. Leaves 3-5.5 x 0.8-2 cm, basally 3-nerved, glabrous, obtuse or subacute at base and apex, serrate, basal serrations not prolonged. Cymes leaf-opposed, 3-5 flowered. Flowers 4 mm across. Capsule terete < 1.5 cm, shortly beaked, strigose, 3-10 loculed; seed ca. 25, trigonous, 1.5 mm.

Remarks: Common weed of irrigated dry fields.



Corchorus tridens

Family: Tiliaceae

Pop. Name: -

Nativity: Trop. Africa and Australia

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Corchorus tridens* L. Mant. Pl. 566. 1771. FBI 1: 398.1874; Dunn in Gamble, 1: 121(87). 1915.

Description: Erect herb to 40 cm. Leaves oblong, lanceolate or elliptic, 3-8 x 0.7-2 cm, basally 3 or 4 nerved, glabrescent, cuneate, serrate, acuminate; basal serrations prolonged. Cymes leaf opposed, 2-5 flowered. Flowers 4 mm across, yellow. Capsule terete, not winged, beak 3-fid, spreading; seeds truncate, to 1.5 mm.

Remarks: Aggressive colonizer. Common weed of cultivated fields and forest fringes.



Corchorus trilocularis

Family: Tiliaceae

Pop. Name: -

Nativity: Trop. Africa

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: June– December

Citation: *Corchorus trilocularis* L. Syst. Nat. ed. 12: 369. 1766 & Mant. Pl. 77. 1767; FBI 1: 397.1874; Dunn in Gamble 1: 122(87). 1815.

Description: Annual, erect herb. Leaves oblong-ovate, 3-7 x 2-2.5 cm, chartaceous, basally 3-4 nerved, glabrous, cuneate, crenate, subacute; basal serrations prolonged or not. Cymes leaf opposed, 2-4 flowered; flowers 4 mm across, yellow. Capsule 3 in a cluster, 3-6 cm, 3-4 angular, scabrid, 3 or 4 valved, beak entire; seeds 1 mm, truncate.

Remarks: Common weed of cultivated fields and edges of tanks.



Crassocephalum crepidioides

Family: Asteraceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: July – December

Citation: *Crassocephalum crepidioides* (Benth.) Moore in J. Bot. 50: 211. 1912. *Gynura crepidioides* Benth. in Hook.f. Fl. Niger 438. 1849.

Description: Annual, erect herbs to 1m tall. Stem striated. Leaves elliptic-ovate, 4-12 x 2-5 cm, base cuneate-attenuate, margin dentate, apex acuminate. Heads in terminal corymbs, brick red or yellow-red, homogamous; style branches triangular at apex. Achenes oblong, ribbed.

Remarks: Occasional weed among open canopies of moist deciduous and evergreen forests.



Crotalaria pallida

Family: Papilionaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – March

Citation: *Crotalaria pallida* Dryand in Ait Hort. Kew. Ed. 1.3:20.1789. *C. striata* DC. Prodr. 2. 131. 1925; FBI 2: 84. 1876. Gamble 1:302 (212). 1918. *C. striata* DC. var. *acutifolia* Trimen, Handb. Fl. Ceylon 2:10. 1894; Gamble 1: 301 (213). 1918.

Description: Undershrubs to 1.5 m tall, branches glabrescent. Leaves 3-foliolate, leaflets elliptic or obovate, 3-6 x 2-4 cm, chartaceous, punctate, base cuneate to subacute, entire, apex obtuse, mucronate. Flowers yellow in terminal or lateral, elongated racemes, many-flowered. Pod oblong, terete, much exceeding calyx. Seeds upto 50.

Remarks: Aggressive colonizer. Common along railway tracks, road sides and in degraded forests.



Crotalaria retusa

Family: Papilionaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – February

Citation: *Crotalaria retusa* L. Sp. Pl. 715. 1753; FBI 2: 75. 1876; Gamble 1: 293(207). 1918.

Description: Undershrub; branches pubescent. Leaves simple, oblanceolate. 3-5 x 1-2 cm, chartaceous, glabrous above, pubescent below, base attenuate, margin entire, apex obtuse, retuse; Racemes terminal to 20 cm. Corolla Slightly exceeding calyx, yellow. Pod oblong-terete, 4-4.5 x 1-1.5 cm, glabrous, much exceeding calyx. Seeds ca. 5.

Remarks: Occasional weed of open and degraded forests.



Croton bonplandianum

Family: Euphorbiaceae

Pop. Name:

Nativity: Temperate South America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Croton bonplandianum* Boil. in Adansonia 4: 339. 1846. *C. sparsiflorus* Morong. in Ann. New York. Acad. Sci. 7: 221. 1893; Gamble 2: 1316(920). 1925.

Description: Annual, erect much branched herbs to 75 cm tall. Leaves ovate-lanceolate, 3-5 x 1-2.5 cm, glandular, acute, dentate, base obtuse. Flowers yellowish-white in terminal androgynous spikes. Capsules 3-angled, stellately hairy; seed oblong.

Remarks: Aggressive colonizer. Common weed of cultivated fields, human habitation and forest fringes.



Cryptostegia grandiflora

Family: Asclepidaceae

Pop. Name: Rubber Vine

Nativity: Madagascar

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: June – December

Citation: *Cryptostegia grandiflora* R.Br. Bot. Reg. T. 435. 1819; FBI 4: 66.1883; Gamble 2: 862(606).1923.

Description: Climbing shrubs with plenty of milky latex. Leaves elliptic-oblong, 7-10 x 3-5 cm, subcoriaceous, base acute to truncate, margin entire, apex subacute, lateral nerves 8-14 pairs, closely parallel. Inflorescence a terminal, 3-5 flowered cyme. Corolla purple. Follicles paired, ovoid-oblong, 8-12 x 2-2-5 cm, angled, tapering towards apex.

Remarks: Introduced as an ornamental. Aggressive colonizer. Occasional in forests.



Cuscuta chinensis

Family: Cuscutaceae

Pop. Name: China Dodder

Nativity: Mediterranean

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Cuscuta chinensis* Lam. Encycl. Mer. 2:229.1786. var. *chinensis*; FBI 4: 226.1883; Gamble 2: 931(654). 1923.

Description: A leafless twining parasitic herb with filiform, much branched, glabrous, yellow to yellowish brown stems, often forming a tangled mass. Flowers white, solitary or in shortly, stalked cymes; calyx divided rather less than half way down; scales at the base of filaments, fimbriate; styles 2, distinct, elongate, slender; stigmas capitate. Capsules globose, hyaline; seeds 4, very minutely rugose.

Remarks: Aggressive colonizer. Occasional, stem parasite on *Vitex negundo* and on other bushes.



Cuscuta reflexa

Family: Cuscutaceae

Pop. Name: Dodder, Sky Creeper

Nativity: Mediterranean

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Cuscuta reflexa* Roxb. Pl. Cor. 21: 3.5.104. 1798. FBI 4: 225.1883; Gamble 2: 931 (654). 1923.

Description: A twining, leafless, parasitic herb. Branches fleshy, forming dense, yellow masses on shrubs and trees. Flowers pale white, solitary, clustered of 2-4 or in short racemes; calyx divided almost to the base; corolla lobes reflexed; scales almost at the base of corolla tube; style 1, stout; stigmas 2, distinct, fleshy, diverging. Capsules depressed globose, circumscissile near the base; seeds 2-4, black, glabrous.

Remarks: Aggressive colonizer. Occasional stem parasite on garden shrubs, trees and over hedges in scrub lands.



Cyperus difformis

Family: Cyperaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Cyperus difformis* L. Cent. Pl. II. 6/ 1756; FBI 6:599. 1893; Fischer in Gamble 3: 1640 (1139). 1931.

Description: Erect sedge to 30 cm tall, stem to 2.5 mm wide, slender, triquetrous. Leaves flat, to 13 cm, scabrous; sheaths brown. Inflorescence simple or compound, to 5 cm. Spikes globose or capitate, with many spikelets. Spikelets narrowly linear, 3-7 mm, compressed, acute, 5-15 flowered. Glumes broadly ovate or suborbicular. Nut obovoid, triquetrous, to 0.1 mm, apiculate, stipitate.

Remarks: Aggressive colonizer. Abundant along the streams and in rice fields.



Cyperus iria

Family: Cyperaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Peninsular India

Propagation: Seeds

Fl & Fr: August – January

Citation: *Cyperus iria* L. Sp. Pl. 45. 1753; FBI 6: 606. 1893; Fischer in Gamble 3: 1640 (1140). 1931.

Description: Erect sedge to 75 cm tall. Stem sparsely tufted or solitary, triquetrous. Leaves flat or channelled, to 15 cm, scaberulous, sheaths purplish. Inflorescence compound or decompound, 3-10 cm. Spikes ovoid, 15-20 spikeletted. Spikelets spicate, oblong 18-20-flowered. Glumes broadly obovate. Nut obovoid or ellipsoid, trigonous, to 1 mm, pale yellow to grey, apiculate.

Remarks: Occasional in rice fields, ditches and edges of tanks.



Cytisus scoparius

Family: Papilionaceae

Pop. Name: Scotch broom, Yellow broom

Nativity: Europe

Distribution in India: Himalaya, Western Ghats

Propagation: Seeds

Fl & Fr: July – February

Citation: *Cytisus scoparius* (L.) Link Enum. Hort. Berol. Alt. 2: 241. 1822. *Sarothamnus scoparius* (L.) W. D. J. Koch, Syn. Fl. Germ. Helv., 152. 1835.

Description: A short stemmed, erect undershrub, up to 1 m tall. Stem green, branches glandular, tomentose. Leaves ovate or elliptic, to 15x9 cm, base oblique, undulate or sinuate, apex acute, softly pubescent. Flowers white, solitary, axillary. Capsule globose, conered with long, weak spines.

Remarks: Introduced as ornamental plants. Aggressive colonizer. Occasional weed on disturbed ground and fire affected forests in high altitude areas.



Datura innoxia

Family: Solanaceae

Pop. Name: Datura, Mad Plant, Thorn Apple

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: July – February

Citation: *Datura innoxia* Mill. Gard. Dict. Ed. 8. N.5. 1768. *D. metel* auct.non. L; FBI 4: 243. 1883; Gamble 2: 941 (660). 1923.

Description: A short stemmed, erect undershrub, up to 1 m tall. Stem green, branches glandular, tomentose. Leaves ovate or elliptic, to 15x9 cm, base oblique, undulate or sinuate, apex acute, softly pubescent. Flowers white, solitary, axillary. Capsule globose, conered with long, weak spines.

Remarks: Aggressive colonizer. Occasional weed on disturbed ground.



Datura metel

Family: Solanaceae

Pop. Name: Datura, Mad Plant, Thorn Apple

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – February

Citation: *Datura metel* L. Sp.Pl. 179. 1753. *D. fastuosa* auct. non. L. 1759; FBI 4: 242. 1883; Gamble 2: 941 (660). 1923.

Description: Erect, annual-perennial, undershrubs to 1m tall. Stems green or purplish, glabrous or short hairy. Leaves ovate-triangular to elliptic, oblique at base, margin repand-dentate, apex acute or acuminate, 5-20 x 4-12 cm. Flowers white or purple, axillary, solitary. Corolla single or double. Capsule globose, glabrous or hairy with short, blunt, conical spines, 3-4 cm across.

Remarks: Aggressive colonizer. Occasional weed on disturbed ground.



Dicoma tomentosa

Family: Asteraceae

Pop. Name: -

Nativity: Trop. Africa

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Dicoma tomentosa* Cass. in Bull. Sci. Soc. Philom. Paris 12. 1818; FBI 3: 387. 1881; Gamble 2: 728(512). 1921.

Description: Annual, erect much branched herbs to 30 cm tall. Stems covered with white cottony wool. Leaves sessile, obovate or linear, 1-5 x 0.3-0.7 cm, attenuate and clasped to stem, margin serrately denticulate, apex obtuse, apiculate. Heads solitary, axillary, leaf opposed or terminal, homogamous. Corolla white or pale yellow. Achenes obovate, truncate at top, clothed with long silky hairs.

Remarks: Aggressive colonizer. Common weed of scrub lands and forest openings.



Digera muricata

Family: Amaranthaceae

Pop. Name: -

Nativity: SW Asia

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – January

Citation: *Digera muricata* (L.) Mart. Beitr. Amar. 77.1825. *Achyranthes muricata* L. Sp. Pl. ed. 2.1:295.1762. *Digera arvensis* Forssk. Fl. Aeg. Arab. 65. 1775; FBI 4: 717. 1885; Gamble 2: 1169(818)1925.

Description: Erect herbs to 1 m tall. Leaves alternate, elliptic-ovate, 1.5-3.5 x 1-2.5 cm, base truncate, margin entire, obtuse to acutely apiculate, glabrous. Inflorescence axillary and terminal, thyriform spikes or elongated panicles to 15 cm. Flowers pink. Fruit indehiscent, rugose, not enclosed in perianth. Seed globose.

Remarks: Common weed of irrigated dry cultivated fields.



Dinebra retroflexa

Family: Poaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – February

Citation: *Dinebra retroflexa* (Vahl) Panz. in Denkschr. Acad. Viss. Munchen. 270. t. 12. 1814; Fischer in Gamble 3: 1841 (1274). 1934. *Cynosurus retroflexus* Vahl Symb. Bot. 2.20. 1791.

Description: An annual grass. Culms tufted, upto 70 cm tall. Leaves 5-10 x 0.2-0.4 cm, linear, base cordate, apex acuminate. Spikes racemosely arranged along the axis, upto 20 cm long. Spikelets 5 mm, 2-flowered. Caryopsis ellipsoid-oblong.

Remarks: Aggressive colonizer. Common in wet lands and cultivated fields.



Echinochloa colona

Family: Poaceae

Pop. Name: Shama Millet

Nativity: Trop. South America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – March

Citation: *Echinochloa colona* (L.) Link, Hort. berol. 2: 209. 1833; Fischer in Gamble 3: 1776 (1230). 1934. *Panicum colonum* L. Syst. Nat. (ed.10) 870. 1759; FBI 7: 32. 1896.

Description: An annual, tufted grass to 75 cm tall; nodes glabrous. Leaf sheaths 5-15 cm long, glabrous. Leaves lanceolate, 4-10 x 0.4-0.6 cm, base cordate, apex acuminate, occasionally marked with purple bars. Inflorescence linear, to 10 cm. Racemes 4-rowed. Spikelets ovoid-ellipsoid, to 2 mm long. Caryopsis broadly ellipsoid.

Remarks: Aggressive colonizer. Abundant in cultivated fields.



Echinochloa crusgalli

Family: Poaceae

Pop. Name: Barnyard Millet

Nativity: Trop. South America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – March

Citation: *Echinochloa crusgalli* (L.) Beauv. Fss. Agrost. 53. 161-1812; Fischer in Gamble 3:1777 (1231). 1934. *Panicum crusgalli* L. Sp. Pl. 56. 1753; FBI 7:30. 1896.

Description: An annual, tufted grass to 75 cm; nodes glabrous. Leaf sheaths 5-25 cm long, glabrous. Leaves linear-lanceolate, 5-20 x 0.4-0.8 cm, base cordate, apex acuminate. Spike like panicle 10 cm long. Spikelets broadly ovoid, 5 mm, crowded. Caryopsis broadly ellipsoid.

Remarks: Aggressive colonizer. Common in rice fields and wet places.



Echinops echinatus

Family: Asteraceae

Pop. Name: -

Nativity: Afghanistan

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Echinops echinatus* Roxb. Fl. Ind. 3: 447. 1832; FBI 3: 358. 1881; Gamble 2: 724 (509). 1921.

Description: Annual erect herbs to 40 cm tall. Leaves lanceolate, pinnatifid, 2-11 x 1-4 cm, sessile, lobes ovate, spinescent, base amplexicaul. Heads many, collected into globose clusters, compound head, solitary, terminal, homogamous, florets white. Involucral bracts spinescent. Achenes elongate, villous.

Remarks: Aggressive colonizer. Common weed of waste lands, scrub lands and cultivated fields.



Eclipta prostrata

Family: Asteraceae

Pop. Name: -

Nativity: Trop. America (introduced in India before 1824)

Distribution in India: Throughout

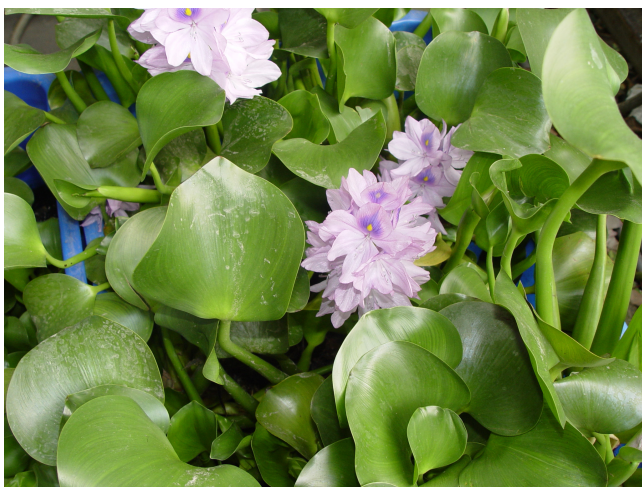
Propagation: Seeds

Fl & Fr: June – March

Citation: *Eclipta prostrata* (L.) Mant. Pl. 2: 286. 1771. *Verbesina prostrata* L. Sp. Pl. 902. 1753. *Eclipta alba* (L.) Hassk. Pl. Jav. 2: 705 (495). 1921. *Verbesina alba* L. Sp. Pl. 902. 1753.

Description: Erect or decumbent herbs, about 30 cm high. Stems striate, sparingly strigose. Leaves upto 9 x 3 cm, opposite, elliptic-ovate, acute to attenuate at base, distantly serrate, sparingly strigose on both surfaces. Flowers white, 0.4 cm long, in axillary, 1 or 2 heads, 0.5 x 1 cm; peduncles to 2 cm long, strigose, ray florets ligulate, Achenes 0.4 cm long, flattened, faintly rugulose.

Remarks: Aggressive colonizer. Common in cultivated fields and edges of tanks.



Eichhornia crassipes

Family: Pontederiaceae

Pop. Name: Water Hyacinth

Nativity: Trop. America (introduced in India during 1914-1916)

Distribution in India: Throughout

Propagation: Vegetative

Fl & Fr: August – December

Citation: *Eichhornia crassipes* (C. Martius) Solms-Loub. in A.DC. Monogr. Phan. 4: 527. 1883; Fischer in Gamble 3: 1530(1069). 1928. *Pontederia crassipes* C. Martius, Nov.Gen. Sp. Pl. 9.t. 4. 1823.

Description: Herb; free floating or rooted, stolons slender, roots elongate, fibrous. Leaves broadly ovate-rhomboid, 5-10 cm long, as long as broad, thin-coriaceous, glabrous, base cuneate to rofund, entire, apex obtuse. Petiole elongate, spongy, with a bulbous portion about the middle. Spike terminal to 20 x 5 cm, ca. 15-flowered. Perianth tube greenish; lobes upper one lilac, with a blue to violet bordered, yellow medium blotch.

Remarks: Aggressive colonizer. Abundant in still or slow floating waters. Nuisance for aquatic ecosystems.



Emilia sonchifolia

Family: Asteraceae

Pop. Name: -

Nativity: Trop. Africa

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – March

Citation: *Emilia sonchifolia* (L.) Dc. in Wight Contrib. Bot. Ind. 24. 1834; FBI 3: 336. 1881; Gamble 2: 716 (503), 1921. *Cacalia sonchifolia* Sp. Pl. 835.1753.

Description: Annual erect herbs to 40cm tall. Leaves radical and cauline, lower ones lyrate lobed, spathulate, 4-10 x 2-4 cm, upper ones 3-4 x 1-2 cm, auricled, dentate or entire, obtuse. Heads in loose terminal corymbs, pink, homogamous. Achenes angled, 5-ribbed.

Remarks: Common weed of forests, cultivated fields, scrub lands and waste lands.



Euphorbia cyathophora

Family: Euphorbiaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: June – December

Citation: *Euphorbia cyathophora* Murray in Commontat. Soc. Regiae Sci. Gott. 7: 81. 1786. *E. heterophylla* auct. non L.: Gamble 2: 1278 (894). 1925.

Description: Annual herb to 80 cm tall. Leaves spiral below, decussate to whorled above, obovate to oblanceolate, 5-7 x 1-3 cm, base acute to attenuate, blade entire or sinuate, serrate to entire, apex acute; floral leaves yellow or red at the basal half. Cyathia 12-15, in terminal clusters. Capsule 4mm across. Seeds 2.5 mm, globose, sharply tuberculate.

Remarks: Common weed of disturbed places, gardens and habitation.



Euphorbia heterophylla

Family: Euphorbiaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Euphorbia heterophylla* L. Sp. Pl. 453. 1753. *E. geniculata* Orteg. Nov. Rar. Pl. Matrit. 18. 1797; FBI 5: 239. 1887; Gamble 3: 1884 (1303). 1925.

Description: Herb to 75 cm tall. Leaves spiral/opposite below, obovate to rhomboid or oblanceolate, 5-9 x 2-5 cm, acute, serrate to entire, apex acute. Cyathia 6-10, cuneate, in terminal clusters. Flowers greenish-yellow. Capsule 6 mm across; Seeds angled, 2 mm across, bluntly tuberculate.

Remarks: Common weed of cultivated fields and forest fringes.



Evolvulus nummularius

Family: Convolvulaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: October – February

Citation: *Evolvulus nummularius* (L.)L. Sp. Pl. (ed.2) 391.1762; Pullaiah & Moulali, Fl. A.P. 630.1997. *Convolvulus nummularius* L. Sp. Pl. 157.1753.

Description: A prostrate herb, rooting at nodes. Leaves suborbicular to subquadrate, 1-2 x 1-2 cm, glabrous, base subcordate or truncate, margin entire, apex obtuse. Flowers 1 or 2 per node, white, in cymes; sepals not enlarged in fruit. Capsule 1-celled, valved, 4 mm across.

Remarks: Common weed of cultivated fields and forest fringes.



Flaveria trinervia

Family: Asteraceae

Pop. Name: -

Nativity: Trop. Central America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – January

Citation: ***Flaveria trinervia*** (Spreng.) C. Mohr. in U.S.D.A. Contrib. Nat. Herb. 6: 810. 1901. *Oedera trinervia* Spreng. Bot. Gart. Halle 63. 1800. *Flaveria australasica* Hook in T.L. Mitch. J. Exped. Trop. Australia 117. 1848; Gamble 2: 711 (501). 1921.

Description: Annual erect, glabrous herbs to 40 cm tall. Leaves elliptic, 1.5-4 x 0.5-1.5 cm, cuneate or attenuate, denticulate or distantly sharply serrulate, acute. Heads one flowered, aggregated in cymes, subtended by floral leaves, solitary, terminal or in the forks of dichotomies, yellow, heterogamous. Achene obovate, ribbed.

Remarks: Occasional in moist places.



Fuirena ciliaris

Family: Cyperaceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: October – February

Citation: ***Fuirena ciliaris*** (L.) Roxb. Fl. Ind. 1:184. 1820. *Scirpus ciliaris* L. Mant. Pl. 182. 1771. *Fuirena glomerata* Lam. Tabl. Encycl. 1:150-1791; FBI 6: 666. 1893; Fischer in Gamble 3: 1669(1158). 1931.

Description: Sedge, stem tufted, to 35 cm, slender, 0.8 mm wide, base incrassate. Leaves folded or flat, shorter than or as long as stem, 9-15 x 0.1 cm, scabrid above; ligule shortly hairy. Spikelets 1 or 2, terete. Glumes broadly ovate. Nut obovoid; biconvex, to 1.8 mm, glossy, to 0.3 mm, smooth or finely striate.

Remarks: Occasional weed of marshy lands, paddy fields and other moist cultivated fields.



Galinsoga parviflora

Family: Asteraceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – January

Citation: *Galinsoga parviflora* Cav. Ic. et Descr. Pl. 3: 41.t. 281. 1796; FBI 3: 311. 1881; Gamble 2: 711(500). 1921.

Description: Annual erect herbs, to 50 cm tall. Leaves lanceolate, 1.5-2.5 x 0.4-1 cm, base attenuate, margin entire or distantly serrate, apex acute. Heads solitary or 2-3, terminal, yellow, heterogamous. Achenes dimorphic, of ray compressed, of disc ribbed.

Remarks: Occasional weed of moist places of forests, plantations and high elevation grasslands.



Gnaphalium coarctatum

Family: Asteraceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Andhra Pradesh, Himachal Pradesh, Tamil Nadu

Propagation: Seeds

Fl & Fr: August – January

Citation: *Gnaphalium coarctatum* Willd. Sp.Pl. 3: 1886. 1804; Pant in Fl. India 13: 85, 1995; Singh & Sharma in Bull. Bot. Surv. India 30: 182. 1988. *G. spicatum* Lam. Encycl. 2. 757. 1786 (non Miller 1768). Grierson in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 1:197. 1980.

Description: An erect annual herb, 10-20 cm tall. Stems simple or sparingly branched at base, decumbent, appressed greyish-white tomentose. Leaves in a basal rosette, 2-4 x 0.4-1 cm, appressed greyish-white tomentose on lower surface. Capitula numerous in axillary clusters in slightly interrupted spicate inflorescence. Florets 2-2.5 mm long, tips whitish with purplish tinge. Disc florets bisexual, 2 or 3. Ray florets female, many. Achenes 0.4-0.6 mm. Pappus whitish, 2.3-2.6 mm long, bases coherent in smooth ring, deciduous.

Remarks: Recent introduction to southern India; found to be gregarious in banks of Godavary river.



Gnaphalium pensylvanicum

Family: Asteraceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Gnaphalium pensylvanicum* Willd. Enum. Hort. Berol. 867.1809; Grierson, Notes Roy. Bot. Gard. Edinburgh 31: 137. 1971. *G. purpureum* auct. non. L. 1753; FBI 3: 289. 1881.

Description: Erect, annual herbs; stems decumbent, white-appressed hairy, 10-20 cm tall. Leaves crowded at base, distant above 2.5-4 x 0.5-1 cm, obovate or spatulate, base attenuate, white-woolly beneath, apex obtuse. Heads densely woolly at base, in clusters. Involucral bracts 2-3 seriate, ovate-lanceolate. Achenes 4 mm long x 2 mm wide, oblong. Pappus 2 mm long.

Remarks: Occasional weed in dried up tanks and margins of river banks.



Gnaphalium polycaulon

Family: Asteraceae

Pop. Name: -

Nativity: Trop. America

Distribution in India: Throughout

Propagation: Seeds

Fl & Fr: August – December

Citation: *Gnaphalium polycaulon* Pers. Syn. Pl. 2: 421. 1807. *G. indicum* auct. Pl. (non. L. 1753); FBI 5: 289. 1881; Gamble 2: 698 (491). 1921.

Description: Annual white-woolly slender herbs to 25 cm tall. Leaves oblanceolate to spatulate, 0.5 - 2 x 0.3 - 0.6 cm, base narrowed, margin entire, apex acute. Heads in terminal spikes, yellow-white, heterogamous; involucral bracts broad, scarious. Achenes oblong.

Remarks: Common in dried up tanks, ditches and margins of river banks.